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in partnership with Scuola di Direzione Aziendale dell'Università Bocconi di Milano

Consulting Report:
A Public-Private Partnership Assessment Model for Successful Healthcare Ventures

June 1, 2018

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Executive Summary

The purpose of this report is to improve the overall quality of life of the Italian people by recommending policies that can improve regional gaps in the economy, efficiency and effectiveness of care. The primary method to reduce these gaps is proposed through the use of public-private partnership contracting (PPP), to more equitably align both policy and financial resources nationwide. Sol Price Consultants (SPC) will show that, if planned and modeled properly according to international best practices, these contracts can improve the Italian Healthcare system dramatically, building a value-based care system that upholds units of health for all as its main goal. In addition, it is SPC's goal to show how standardization of PPP contracts can actually add transparency to the often complex work of calculating value for money in government procurement and budgeting, removing fears of corruption and private profit at public expense. SPC will recommend respect for regional autonomies and challenges with the use of a scalable PPP contract model, while also providing examples of toolkit templates for essential elements in increasing the acceptability and successful implementation of PPP contracts, paving the way for policy and public support at a national level.

1. Challenge: Lack of resources places constraints on Italian healthcare

It is difficult to disagree that complex and dynamic changes in the world of public service, due to technological advancements, diversifying population flows, global conflict, and economic instability have made the challenge of decision makers serving their constituents more difficult than ever, particularly in healthcare. Healthcare costs are rising across the globe due to aging populations, increased survival of chronic disease, technology obsolescence, and aging infrastructure, creating critical needs in the healthcare sector (UNECE, WHO, & ADB, 2012).

The Italian health minister launched the Article 20 programme for funding of the healthcare sector in 1988, at approximately €15B in 1988 prices (Vecchi, Hellowell & Longo, 2010). It aimed to finance 95% of healthcare delivery and the remaining 5% of the costs would be covered by regional budgets. According to *OECD Reviews of Healthcare Quality*, “Italy has made significant progress in improving the quality of healthcare in recent decades,” (OECD, 2015, p.3). Yet, since the 2010 economic crisis, quality monitoring and the improvement of services have been a secondary priority due to budget constraints (OECD, 2015), despite the rapid evolution of healthcare needs.

Shortfalls remain. In 2012, it was assessed that a fifth of hospitals in the *Servizio Sanitario Nazionale* (SSN) needed replacement and 30% needed refurbishment (Vecchi, Hellowell & Longo, 2010). Article 20 programme created difficulties, in that only half of needed healthcare investments were covered, with a total financial gap in Italy measured at €31B (Vecchi, Hellowell & Longo, 2010). These significant budget shortfalls have manifested in the form of health disparities in Italy, both between regions, and within regions. Interregional differences are quite pronounced: Northern regions – except Lombardy and Veneto – show higher expenditures, while southern regions spend less than the national average (Brenna, 2011). Italian regional governments have strived to balance these disparities by way of different strategic financial approaches. One such set of policies for regional rebalancing in healthcare has included taxation schemes (Brenna, 2011), such as:

- Percentage of the value added tax (VAT) revenues

- Production tax (IRAP)
- Percentage of personal income taxation (IRPEF)
- Gasoline consumption tax

However, as estimated by the European Commission (EC) (2011), there remains an infrastructure funding gap of €1.71T to €2.2T by 2020 in Europe.

2. Challenge: Lack of clear policies and implementation of EU evaluation standards makes consistent performance management in healthcare procurement difficult

Healthcare systems are a priority for all European Union (EU) members. Therefore, the EU Commission agenda focuses on developing effective, accessible and resilient healthcare systems (EU Commission, 2018), many of which employ non-traditional procurement methods, such as Public-Private Partnerships (PPPs) or EU-incentivized development programs. Regulatory statutes such as the EU Cohesion Policy 2014-2020, the European Semester and the Smart Specific Strategies (S3) were created to support this agenda, to provide a number of funding mechanisms for improving healthcare systems across the world, and to improve transparency and reliability (EU Commission, 2018). Yet, the Italian healthcare system is still reticent to adopt use of EU incentivized development programs and non-traditional PPPs.

Systematic monitoring and careful performance management in the form of standardization can grow information-sharing, demand transparency, prevent corruption, and align policies more equitably to strengthen the use of PPPs in the Italian healthcare sector. SPC's research advances empirical standards based on economy, efficiency, and effectiveness. SPC defines "economy" as overall value for money, "efficiency" as reduced costs, and "effectiveness" as improved quality of care provided. For the purposes of this report, a unit of health is defined as an additional year of quality life and wellness, based on the health economic principle of Quality-Adjusted Life Year (QALY), part of an individual's overall Quality Adjusted Life Expectancy (QALE).

SPC's research will answer how governments can address criticisms through existing EU standards of transparency with performance management, often through data-sharing systems that can engage public and private stakeholders in new ways (Roehrich, Lewis, & George, 2014; The World Bank, 2017). These achievements can simultaneously allow more flexible planning and financing of PPPs, while enforcing more transparent regulations on safety and contracts, creating a unifying lens of justification for PPP models: Economy, efficiency, and effectiveness.

3. Challenge: Issues in complexity and liability

Criticisms of the PPP model in international healthcare remain significant. Caution is needed, since it is possible that private vendors are often allowed their own incentive structures, focusing on minimizing cost rather than improving services, which can often violate the basic tenets of transparency and cost-benefit (Roehrich, Lewis, & George, 2014). The naturally extensive time periods characterized by some types of PPP healthcare models (in the form of large infrastructure projects) creates the perception that PPP can limit needed flexibility in rapidly changing healthcare advancements and technologies. Aggravating this scenario, regional healthcare operators are reluctant to take on new procurement methodologies and projects in light of *Mani Pulite* corruption scandals

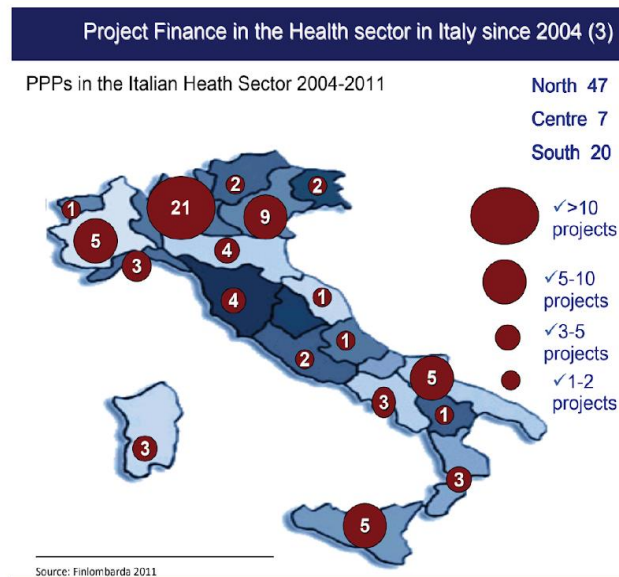
among public officials, many of whom can be held personally liable in prosecution for wrongdoing (Vannucci, 2009).

4. Challenge: Cultures of regional autonomy and lack of public acceptance

PPP criticisms are particularly acute in the Italian public, with its deep culture of local control, characterized by “important issues of ownership concerning the significance of ‘community’ and ‘place’ in the management of public affairs” (Argento, et al., 2010, p. 43). This means that any government body seeking to create a unifying standard of PPP modeling might face significant challenges in regional implementation.

Yet since 1998 legislative reformation, private funding has been encouraged in Italian public projects, especially in the healthcare sector, which has become the second-largest sector behind transportation (UNECE, WHO, & ADB, 2012). Italy’s PPP projects in the health sector include 30 hospitals, which have added 600 beds and €3.5B in capital expenditures (UNECE, WHO, & ADB, 2012). Although PPPs have begun to be applied across more projects, the distribution of PPPs across different regions is still uneven:

Figure 1: Healthcare PPP Distribution in Italy

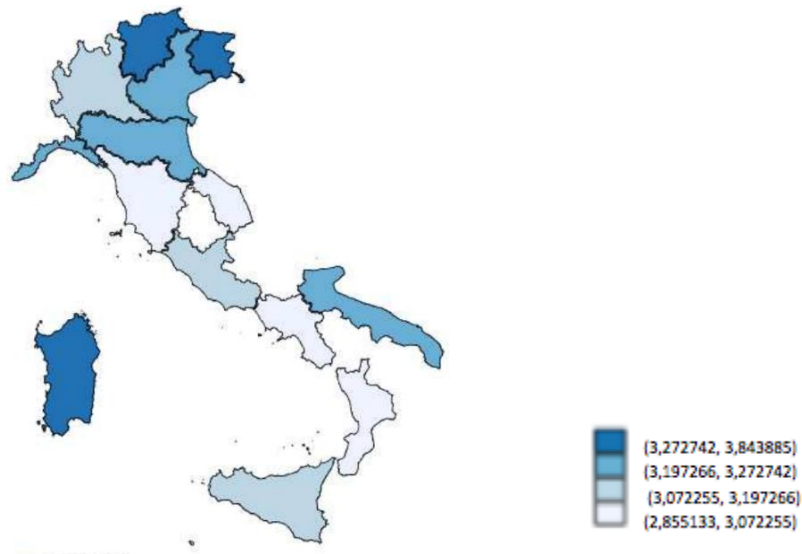


Source: Ricchi, M. (2012). Case Study: PPP in Italian Health Sector. Presented to the United Nations Economic Commission for Europe (UNECE) Unita' Tecnica Finanza di Progetto (UTFP), Geneva. Retrieved from: https://www.unece.org/fileadmin/DAM/ceci/documents/2012/ppp/ppp_days/Day1/Ricchi.pdf.

According to the map above, SPC observes that the number of PPP projects is clearly disparate across all regions in Italy. Generally, northern regions have formed more PPPs than southern and central regions. According to Cicchetti & Gasbariini (2016), since the Italian Healthcare operates through a decentralized system, regional governments have developed a significant culture of autonomy. Different regions have evolved different policies and attitudes toward healthcare, and the

needs among their populations vary, changing the delivery of their health plans. Generally, northern and central regions of Italy have benefited from the best-regarded hospitals. Southern regions have experienced lower administrative capacity and quality of hospital services, and higher rates of poverty and preventable disease (ISTAT, EURES, 2018; Neri, 2015). Analysis shows that, as northern regions support PPPs that increase their healthcare service capabilities, this has attracted patients from other regions (Neri, 2015). Adding to this perspective, the following map also shows how northern regions have benefited from higher public purchasing ability in medical services than southern regions:

Figure 2. Distribution of Public Healthcare Facility Purchasing Ability in Italy



Legend: Darker Blue = Higher efficiency in procurement for medical devices, based on a coefficient of price paid by a facility versus marginal market cost for a given device.

Source: Bucciol, A., Camboni, R., and Valbonesi, P. (2017). Buyers' Ability in Public Procurement: A Structural Analysis of Italian Medical Devices. Retrieved from: <https://ssrn.com/abstract=3064621> or <http://dx.doi.org/10.2139/ssrn.3064621>.

This argument helps contextualize how the purchasing ability of public buyers (local public hospitals) has been tied to the constraints of region-specific financing (Bucciol, et al., 2017). Higher budgets and higher purchasing ability means that public hospitals also have a greater ability to negotiate competitive partnerships with private companies, and to improve healthcare supplies and services (Bucciol, et al., 2017). In turn, differing degrees of procurement options in PPP ventures across these regions then return differing levels of economic efficiencies to the public authorities, further spreading financial inequalities across the regions over time.

Clearly, from a nationwide perspective on resource management, greater healthcare equalities must be a strategic priority for the Italian people. Given the decentralization and regional autonomy of the Italian Healthcare system, a lack of uniformity of healthcare standards across the country also presents challenges towards equitable and high quality of care. However, trends toward increasingly autonomy in policy and budget continue: "...Italy's NHS is also becoming intensely decentralized to

react closer to citizens' preferences at the level of the political and administrative division" (Giannoni & Hitiris, 2002, p. 1829). The nature of the autonomy in these healthcare expenditures "...can aggravate the already existing interregional inequalities" (Giannoni & Hitiris, 2002, p. 1829).

Although a national healthcare funding allocation formula combines "population size, average age, mortality and other regional characteristics, among which there are historic spending levels," there are still crucial procedural gaps that influence performance, "particularly in the South where a high concentration of the poor is found" (Giannoni & Hitiris, 2002, p. 1830). In addition, "Since the Italian regions are still characterized by deep economic disparities, increasing decentralization and reliance on regional sources of finance could, in principle, widen the interregional divergence in both funding and spending on healthcare" (Giannoni & Hitiris, 2002, p. 1830). Under the priority of providing equitable healthcare access to all Italians, this scenario presents an urgent need for creative reforms to close these healthcare gaps across all regions, in innovative yet reliable ways.

5. Challenge: Information and competency asymmetries

Any increase in competition can help improve the economy, efficiency and effectiveness of healthcare delivery. Yet, the public sector also pays for transaction costs in procurement. Besides the cost of training and hiring experts for a complex range of products and contracts, the public sector must negotiate with different stakeholders to ensure the prospective outcomes of the PPP, which incurs additional transaction costs (Vecchi & Cusumano, 2018). Most importantly, if public needs are not satisfied, governments are ultimately held responsible. The Italian government has made strides in attempting to meet the growing demand for healthcare, but resources and therefore care levels "are still unevenly distributed across Italian regions. Greater guidance and support from national authorities is needed to ensure a more consistent approach" (OECD, 2015, p. 14).

PPPs can add value by providing transparent, innovative, and effective solutions on a scalable spectrum, customizable to the diversity of each project, while still standardizing procurement processes, in a consistent approach across Italy (OECD, 2015). SPC will recommend a nationwide PPP toolkit protocol be devised for adoption in this respect, allowing for a series of contractual constructs that promote competition and prevent corruption, but also provide flexibility at the regional level, allowing health operators to determine the type of PPP procurement arrangements they can support and the competencies they need to develop. Specifically, toolkits should dictate how projects can streamline planning, delivery, budgeting, information sharing, and performance management, within a scalable system that can account for existing regional difference and needs.

1. Solution: Determining and monitoring the value of PPPs

First and foremost, the assessment of best practices in performance management is critical to improving the potential for PPPs in Italian healthcare. A standardized, methodical strategy for PPP contract modeling can be tailored to regional needs and implemented on a local level, improving PPP feasibility and transparency on a broader scale. The Organization for Economic Co-Operation and Development provides 10 best practices in PPP procurement (OECD, 2008):

1. *Affordability and value-for-money as benchmarks for PPP viability.*
2. *Value-for-Money (VfM) as the primary objective in PPP design.*

3. *Fiscal rules and expenditure limits imposed either legally or as political commitments.*
4. *Risk sharing in order to yield VfM.*
5. *Competition and contestability between potential private partners.*
6. *Budget documentation and transparency, including full details of guarantees and contingent liabilities.*
7. *Regulatory and legal framework to build trust*
8. *Institutional capacity to create, manage and evaluate the PPP.*
9. *Public sector comparator (PSC) to improve the scrutiny of a PPP project and improve the assessments of value for money.*
10. *Political support from the highest level and ideally across all party political lines, as PPP contracts tend to last longer than the elected terms of governments.*

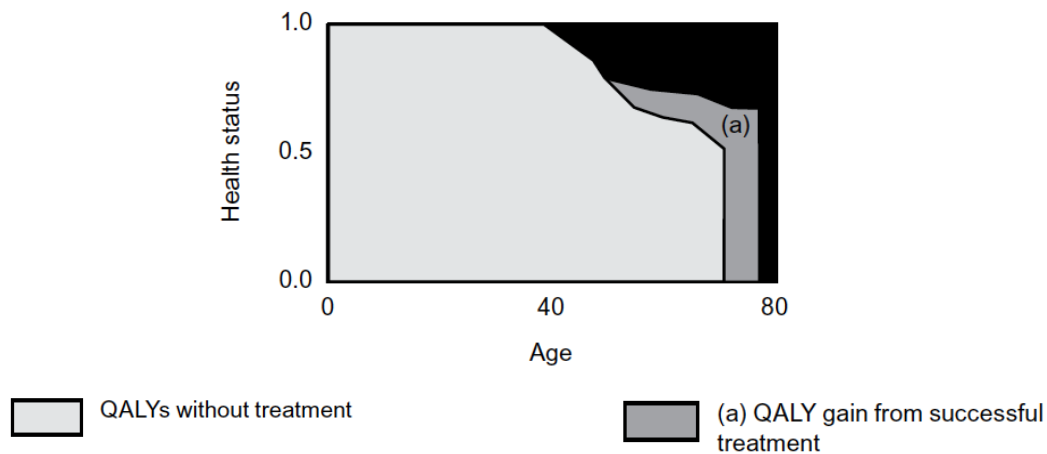
To further clarify these recommendations, there is a general acceptance among international institutions, scholars, and policymakers that the decision to undertake a PPP should be based on a formal value for money, or VfM analysis (Vecchi & Hellowell, 2018). The World Bank Institute's 2013 report, *How Governments Choose When to Use PPP to Deliver Public Infrastructure and Services*, states that value for money is "the optimum combination of whole-of-life costs and quality of the good or service to meet the user's requirements" (p. 9). Typically included in VfM analysis are: Base and finance costs, competitive neutrality adjustments, and the value of risks (Vecchi & Hellowell, 2018). Higher value for money is mainly obtained through risk transfer, competition, and the use of private sector management skills. VfM is usually estimated according to standardized procedures laid down by the central or regional government authorities within the EU. However, empirical analysis within Italy leads to the SPC recommendation that it is vital to incentivize a more standardized VfM analysis to make PPPs a more accepted policy, carried out to improve efficiency (Vecchi, 2018).

According to the Independent Evaluation Group (2016), current financing conditions for public procurement projects are estimated under disparate and inconsistent processes. Given this disconnect, governments may conduct projects that could run over budget, or even impose additional fiscal risks to the overall national budget. To mitigate this scenario, SPC will recommend that VfM tools can be used to estimate the budgetary implications of PPP projects, to evaluate the risks of programs, to identify critical elements of specific PPP contracts, to adjust fiscal plans, and to further improve fiscal transparency. Yet this valuation process is a highly complex and controversial one that warrants further explanation.

The cost of a PPP is calculated as compared to "an equivalent and usually hypothetical project that is assumed to be financed and managed by the public sector according to a traditional public-only procurement approach, called the "public sector comparator" (PSC) (Vecchi & Hellowell, 2018, p. 56). The key issue that remains controversial is how to account for implicit finance costs in a PSC. In some cases, the cost of the investment is charged upfront (in construction phases of a large DBFMO), which then generates an increased value for the discounted cost of a PSC over a PPP (Vecchi & Hellowell, 2018). In other cases within Italy, the only realistic financial alternative to a PPP is to borrow money from the national development bank, in which the PSC's cash flow must consider the costs of debt repayment (Vecchi & Hellowell, 2018). Often, a complete appraisal of the economic and financial merits of a given PPP contract are not fully represented in many current methods of VfM analysis, which ignore difficult-to-quantify measurements such as social benefits (Vecchi & Hellowell, 2018).

Health gains are often the central indicator of the benefits of a healthcare intervention (Smith, 2009). A focus on health-related outcomes directs attention toward the patient, rather than toward the outputs produced by the organization (Smith, 2009). Moreover, some widely accepted measures of health gain, such as quality-adjusted life years (QALYs) are “independent of the technologies used to deliver care, obviating the detailed scrutiny of the physical actions of organizations when comparing performance” (Smith, 2009, p. 29). A QALY is “a year of life, adjusted for the quality (or value) of life it offers to the individual. A year of perfect health is considered equal to 1.0 QALY. Conversely, death would be given a weight of zero” (Smith, 2009, p. 16). The following figure illustrates expected QALYs without treatment and expected QALYs gained from successful treatment.

Figure 3. Expected quality-adjusted life years (QALYs) gain with and without treatment



Source: Smith, P.C. (2009) *Measuring value for money in healthcare: concepts and tools*. Centre for Health Economics.

Yet health gains can be controversial in their calculation. Patients are becoming increasingly vocal in demanding that healthcare should be responsive to their concerns beyond the health effects of treatments, including issues as diverse as promptness, autonomy, empowerment, privacy, and choice. It is debatable how these concepts should be quantified into VfM analyses, even when they make a clear contribution to patient well-being (Blendon, Schoen et al, 2003). In addition, these issues can include other health equity goals, indicating a concern with variability in access to healthcare and variations in care delivery itself. However, these metrics are often poorly articulated and not consistently measured. Furthermore, equity goals sometimes conflict with other goals such as health care maximization (Williams and Cookson, 2000). One school of thought is that the fairness of the system can be perceived as just another outcome. However, some healthcare experts argue, if equity concerns are important, outcomes (such as health gains) should be differentially weighted according which patient receives them. For example, quality of life years (QALY) gained by a disadvantaged person should be valued more highly than a QALY secured by a non-disadvantaged person in the same population (Williams, 1997).

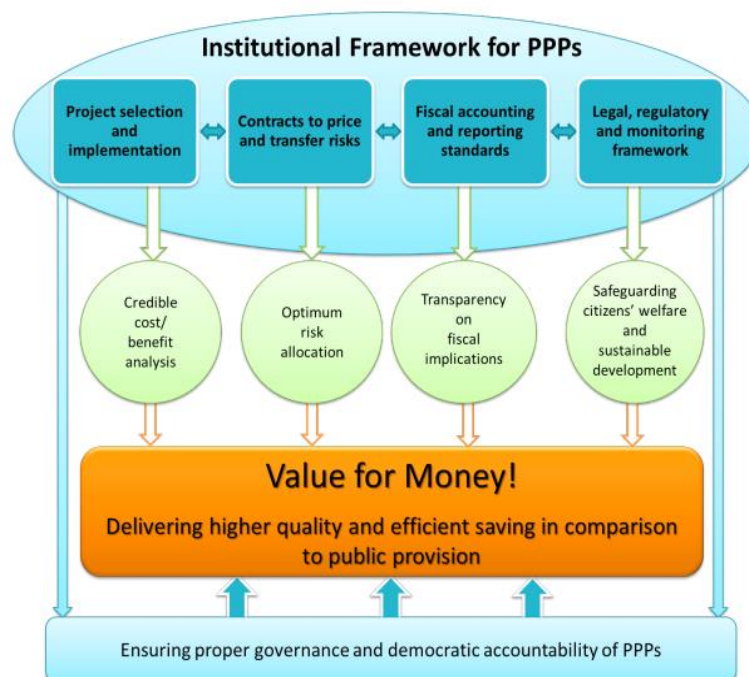
Overall, there is increasing international recognition that healthcare yields value outcomes beyond the immediate health benefits to the patient. Many treatments offer broader socioeconomic

benefits to patients, for example in the form of reduced private care costs or improved opportunities to seek out paid employment. An even broader perspective might extend the notion of value to benefits of society, such as reduced demands on social care agencies and charities, and macroeconomic benefits such as improved productivity of the workforce (WHO, 2001). Currently, there is little consensus on how to measure the broader societal benefits of healthcare. The decision about whether to adopt a narrow focus on health gains secured for individual patients or a broader focus on societal benefits depends on the perspective of the VfM analysis (Smith, 2009).

As a result, SPC recommends that a holistic concept of value for money must be the primary objective in PPP design. The most objective VfM analysis available will be critical to showing that PPPs have allowed governments to identify financing opportunities above and beyond what traditional procurement contracts allow, and that healthcare projects through PPPs have proven to be less time- and resource-intensive than public procurement alone (Espigares & Torres, 2015). An optimal VfM analysis has the combination of economy, efficiency, and effectiveness, calculated over the whole of a project's life (OECD, 2008). Key issues to consider include the following:

1. *Can the contract be constructed so that outputs can be identified and objectively measured?*
2. *Is the scope of the project well defined and suitable – are there services that could be included or excluded that may improve VfM?*
3. *Is there likely to be adequate operational flexibility over the lifetime of the contract, at an acceptable cost?*
4. *Is demand for the service reasonably predictable over the lifetime of the contract?*
5. *Are the benefits of PPPs – for example in terms of cost/time overrun management and innovation – likely to exceed the costs of procuring the PPP?*
6. *Is there likely to be sufficient interest and capability from the market to ensure a good competitive response?*

Figure 4: Key components of an enabling institutional framework for PPP



Source: Jomo, K. S., Chowdhury, A., Sharma, K., & Platz, D. (2016). *Public-Private Partnerships and the 2030 Agenda for Sustainable Development: Fit for purpose?* United Nations, Department of Economic and Social Affairs.

SPC recommends that the Italian government provides regional governments with access and advisories to toolkit software for VfM in PPP projects (OECD, 2008, p. 20). Open source VfM toolkits as recommended by SPC include modules such as the Excel-based VfM Toolkit from the Chartered Institute of Public Finance & Accountancy (CIPFA) designed for local government use. These modules interpret criteria by formulas that government officials can consider when assessing whether a project is likely to achieve VfM if delivered as a PPP. And importantly, they can provide access to data early enough to be useful in planning budgets and identifying efficiency savings in advance (cipfastats.net, 2018).

Another highly accessible analysis tool is the PPP Fiscal Risk Assessment Model (PFRAM) developed by the World Bank. An Excel-based software tool, PFRAM consists of five analysis “blocks,” including: Input data, calculations, outputs, sensitivity analysis, and a Project Risks Matrix (PRM) (International Monetary Fund, n.d.). The software analyzes a project’s allocations, likelihood of success, impacts, and potential mitigation measures, all calculated based on project-specific information provided by users. In the analysis process, international evaluation standards (International Public Sector Accounting Standards No. 32, Service Agreements) are applied to PFRAM calculations, as the basis of fiscal impact results in a PPP project.

Figure 5. A PRFAM Project Risk Matrix software screenshot example

	IDENTIFICATION OF RISKS	ALLOCATION	LIKELIHOOD	FISCAL IMPACT	RISK RATING Likelihood*Impact	MITIGATION STRATEGY	PRIORITY ACTIONS Rating*Mitigation
1	Governance risks	Public	Medium	Low	Low	NO	Medium priority
2	Construction risks	Shared	Medium	Medium	Medium	NO	High priority
3	Demand risks	Private	High	High	Critical	NO	Critical
4	Operational and performance risks	Shared	Low	Low	Irrelevant	NO	NO action required
5	Financial risks	Private	Medium	Low	Low	YES	Low priority
6	Force majeure	Shared	Low	High	Medium	NO	High priority
7	Material adverse government actions	Public	Low	Low	Irrelevant	NO	NO action required
8	Change in law	Public	Low	Medium	Low	YES	Low priority
9	Rebalancing of financial equilibrium	Private	Low	High	Medium	NO	High priority
10	Renegotiation	Shared	Medium	High	High	YES	Medium priority
11	Contract termination	Shared	Low	Medium	Low	NO	Medium priority

Source: International Monetary Fund. (n.d.) PPP Fiscal Risk Assessment Model (PFRAM). Author: Washington, DC. Retrieved from: <https://www.imf.org/external/np/fad/publicinvestment/pdf/PFRAM.pdf>.

PFRAM and similar modules can be used as an approach to rapidly build employee competencies in weighing the risk of different procurement plans, screening for the most feasible and

efficient plan at implementation, as well as adjusting the scheme as needed by adopting renegotiation for unforeseen circumstances as the project evolves throughout the life of a PPP (International Monetary Fund, n.d.). The preceding are just a few examples that provide toolkits for VfM analysis of PPPs, but many different private organizations make available a variety of toolkit frameworks for effective analysis of VfM in PPPs, which can quickly build employee fluency with these project and procurement techniques, despite differing regional settings and needs.

2. Solution: Increasing social acceptability of PPPs

Italy's tradition of PPPs in public service delivery is historic, dating to the late 19th-century's Villoresi irrigation canal on the River Ticino. Legislative reforms in 1998 opened almost all public services to PPPs, significantly expanding their use in healthcare (Donatini, 2016). At €6B, Italy now ranks third worldwide in healthcare PPP capital investment, after only the UK and Canada, with public funds comprising over 75% of nationwide healthcare spending, distributed through a system of regional autonomy in management (UNECE, WHO, & ADB, 2012). Use of the PPP model has been found to shift financial risks to private contractors, ensuring greater cost certainty for governments and rebalancing capital markets, as well as achieving better value for money, delivering projects faster and less costly relative to traditional public procurement models (UNECE, WHO, & ADB, 2012). Yet, costs for public health delivery in Italy are still estimated to account for 50% of public budgets at the regional level, €110B nationwide (UNECE, WHO, & ADB, 2012), leaving significant room for cost improvement through innovation, and significant public controversy in decision making.

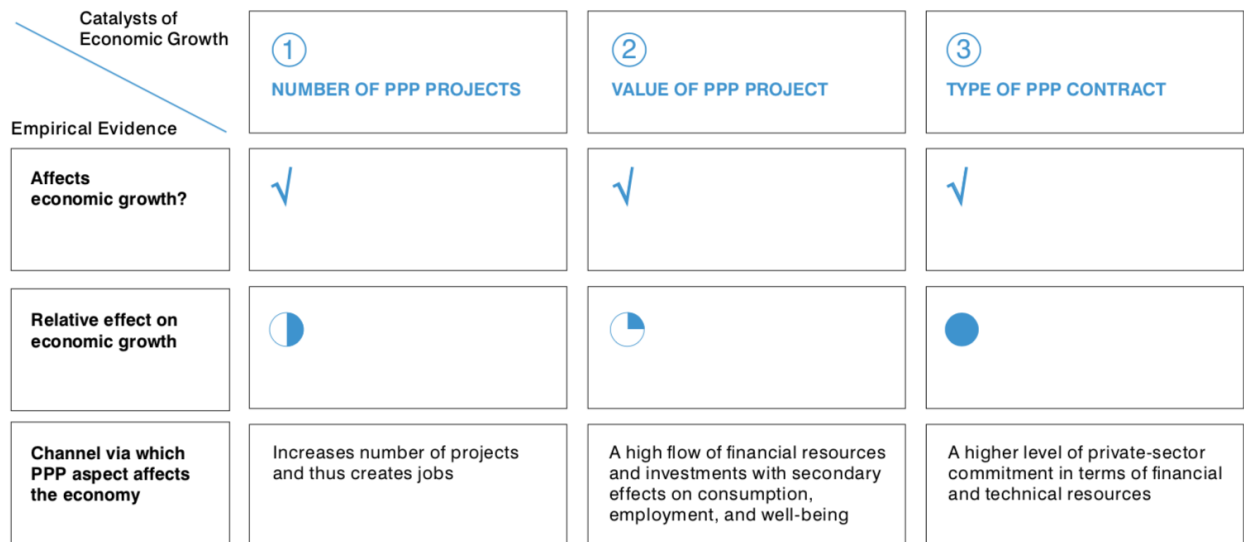
In the best-case scenario of PPP implementation, public sectors are capable of planning projects in a more competitive market with a wider pool of expertise, and governments can reduce their operating budgets to achieve wider goals while maintaining service quality for the public (OECD, 2015). Modern PPPs were introduced to Italy by the Code of Public Contracts in 2002 (OECD, 2015). This legislation was intended “to increase the involvement of private capital in the realization of public works under PPP arrangements,” in order to preserve public resources (OECD, 2015). Yet it is clear that, along with different cultural priorities on the possibility of PPP contracts, different healthcare priorities have arisen in regions with disparate populations and financial concerns. “Proactive, coordinated care for people with complex needs must be delivered by a strengthened primary care sector. Fundamental to (this process) will be ensuring that the knowledge and skills of the healthcare workforce are best matched to needs” (OECD, 2015, p. 3).

The high-debt, high-deficit conditions of Italian national budgets also create potential risks for the use of PPPs, perhaps costlier to governments in the short-run of a project's life (Italian Ministry of the Economy and Finance, 2015, p. 3). However, without PPPs, the public sector will not have the resources to meet the increasing demand for quality care, as the allocation of the public tax base becomes increasingly limited (OECD, 2015). SPC recommends that the Italian government consider increasing publication of vendor contracting, in the already highly-regulated nature of PPP contracts, in order to create a context moving toward general support of PPPs when implemented transparently (OECD, 2015). Many such public reporting requirements can even be built into the requirements of a contract.

It is important to remember in these arguments that “public provision does not imply that government also has to be the producer of the services” (Espigares & Torres, 2015, p. 3). PPPs have

historically been used to channel investment into large projects, such as building a new hospital and delivering associated services under a design-build-finance-maintain-operate (DBFMO) model (Vecchi & Cusumano, 2018). However, the trend is that both in the UK and Italy, these contracts have evolved to include not only core infrastructure services (“hard services”), but more “soft services” outsourced under shorter-term models and contracts, called PPP “Light” (Vecchi & Cusumano, 2012). This model limits the timeframe of services so that many lesser vendor agreements, such as for cleaning, IT management, catering, or others, can be contracted to other smaller, specialized private firms (rather than large construction companies or the public providers). In this way, more entities in the private sector can be included in PPP proposals, and competition can be amplified in the market, ensuring services are delivered at better prices and in higher efficiency (Vecchi, 2018). Moreover, varying levels of financial risk that accompany different services can be distributed to different companies through a tailored contractual process (Vecchi, 2018), further balancing the procurement market:

Figure 6. Key Findings on How PPPs Affect Market Growth



Legend: ✓ Yes ● 100% ◐ 50% ◑ 25%

Source: Shediak, R., Abouchakra, R., Hammami, M., & Najjar, M. R. (2008). *Public-Private Partnerships: A New Catalyst for Economic Growth*. Booz & Company.

SPC recommends regional and facility public relations language that explains how PPPs increase these efficiencies and job opportunities where they are implemented, which also stimulates overall GDP growth (Shediak, et al., 2008). Communications can explain how public funds can then be more efficiently spent on other public-funded needs, to generate additional social and economic products. Analyses show that “a 1% increase in PPP investment will increase GDP per capita by 0.3%” (Shediak, et al., 2008, p. 8). Globally, countries with 70 or more PPP projects demonstrated

25% GDP growth between 1990 and 2003, “implying that consistent investment in PPPs will increase GDP levels sizably” (Shediac et al., 2008, p. 8).

SPC also recommends regional public relations efforts that explain how successful PPP results shape the economy in other ways. For instance, stakeholders benefit from the ability to organize and institutionalize their needs and voices when they are provided participation in the planning process (Stadtler, 2016). Through growth of partnership networks, successful PPPs may also generate additional projects and initiatives that promote a sustainable environment or “pipeline” for further market innovation in the long run (Stadtler, 2016). Reinforcing the nature of this pipeline through public language and perception is critical to the acceptability of PPPs, in showing that creating an environment hospitable to attracting corporate partners and overall capital growth is critical to the Italian market.

In addition, in order to encourage innovation in PPPs, SPC recommends the national government consider, in the process of purchasing and procurement, that the personal financial liability of localized healthcare staff and administrators must be removed. No one individual should hold personal liability for organizational effects that are larger than they can anticipate or control, especially in a market of changing healthcare needs and population flows – unless of course they are found guilty of criminal corruption. Instead, SPC recommends adoption of a legal framework in which the regional healthcare authority as a whole is responsible for purchasing and procurement liabilities, which will allow localized decision-makers greater freedom to innovate new contractual agreements based on localized patient needs.

3. Solution: Increasing competencies through PPP toolkits and training modules

Adopting new business intelligence tools will be critical to helping agencies focus on new methods in management, analysis, and application of patient data in support of treatment that is economic, efficient and effective (Di Carlo & Santarelli, 2012, p. 3). Use of business intelligence tools has been proven to increase health service quality and stimulate economic growth and development, as health care operators using these systems can enhance patient care and provider productivity, support patient empowerment and public participation, and fill knowledge gaps that previously hindered decision-making and outcome assessments (Di Carlo & Santarelli, 2012). Many of these tools, such as Information and Communication Technology (ICT) modules for data management can offer innovative mechanisms that are capable of governing operations more objectively, less likely to create significant diseconomies of scale based on situational conditions or issues in competencies (Ciaschini et al., 2016, p. 7). Despite ICTs’ proven effectiveness, records indicate the total Italian investment in ICTs has decreased over time (Ciaschini et al., 2016, p. 8). SPC concludes Italian ICT investment patterns show decision makers’ limited understanding of solutions these systems offer. As a result, SPC recommends securing commitment from central and local health authorities to a new cultural approach to innovation and technology, by supporting these systems with appropriate training consortia (Di Carlo & Santarelli, 2012).

To meet the training needs of such wide-scale healthcare systems, leadership academies, contracting education, auditing committees, and performance management committees can be established at the health operator level, to develop and administer training on how to conduct software

systems in PPP contract maintenance from the perspective of value-based care. It is even possible to integrate external non-governmental organizations (NGOs) or patient special interest groups (such as diabetes or cancer awareness groups) in the work of performance management committees and consortia that develop training for new PPP systems, in order to create more transparency with the public and remove fears of corruption. SPC recommends that funding for training modules be secured from private partners in contracting, to reduce strain on government resources – yet contractors must be prohibited from involvement in healthcare PPP training content development, in order to preserve integrity and prevent conflict of interest. Training modules should include, at minimum:

- Funding by private partners as part of contract costs. Content should be developed by government-appointed consortia to include health subject experts, not contractors
- Value-based care methods, i.e. bundled services: Incentives for physicians to holistically manage patient care; no incentives or penalties for poor disease management
- Elements of PPP contracting: VfM, PFRAM or similar risk analysis modules
- Elements of Procurement: Italian and EU standards in contracting and performance efficiency

Case Studies

- *The Case for Scalable PPPs: Bluewater Hospital, Canada*

The \$214.1M Bluewater Health redevelopment project involved new construction of a seven-story building and renovations, in which the public sector retained ownership, control and accountability for the hospital, including new facilities. Efficiency indicators successfully evolved from numbers of procedures performed to patient-outcomes focused metrics (Infrastructure Ontario, 2018).

- *The Case for Social Acceptability of PPPs, based on Funding Options Creating Entrepreneurship and Opportunity: Karolinska Institutet's "KI Innovations," Sweden*

A public medical university in Solna, Sweden, The Royal Caroline Institute has developed a entrepreneurship program, specifically to encourage discoveries in research, bringing new products that benefit individuals and society to market. Since its launch in 1996, KI Innovations has evaluated more than 1500 research-based ideas. At the beginning phase (START), projects are mainly supported internally. Startup companies without connections to academia are also supported. Investments that KI Innovations can make within the later phases are financed via successful exits and licensing deals for projects in which KI Innovations has current or previous ownership (Karolinska Institutet AB, 2018).

- *The Case for Training Consortia to Build Competencies in PPPs: The World Federation of Hemophilia*

The World Federation of Hemophilia (WFH) funds programs and activities with contributions from corporations, foundations and government agencies, working to reduce or eliminate gaps in hemophilia treatment around the world. Its Training Programme for Healthcare Providers and Patients for Comprehensive Care and Development of Advocacy has promoted extensive hardcopy training materials for stakeholders, supplemented by frequent telephone and email contact and periodic regional and in-country visits. Case reports from recipient physicians on how the products have been utilized are used to refine the program (Pierce, et al., 2018).

Conclusions

The meaning of economy, efficiency, and effectiveness must be better understood from a policy framework for all of Italy. Decision-makers must make clear what these goals mean for their constituents. Population pressures, budget debates, regional identities and value for money concerns must be reframed in the context of what the Italian people want their country to uphold (Schepper, Doooms & Haezendonck, 2014). SPC proposes that the guiding principle in Italy is better healthcare for all. In this context, notions such as PPP, purchasing, budgets and VfM take on new meaning when interpreted by the availability of care to all, the overall quality of life of the Italian people, and how better health affects their ability to interact productively in society and the economy.

Basing the guiding principle of the Italian medical system on better healthcare for all encourages an urgency in value-based care, rather than the current public procurement system, which simply encourages the lowest bottom-line price. A unified strategic plan by which Italy can achieve these goals through economic, efficient, and effective PPPs in healthcare can create a value-based healthcare system centered on saving lives and increasing their quality across the nation, rather than favoring current regional competition and wealth inequality. Many regional healthcare operators have predominance over others due to localized resources, which either helps or hurts healthcare productivity and solvency in an entrenched cycle. Yet building on the current Italian resources in place, it is possible to facilitate standardized training methodologies at the health operator level that can streamline processes of PPP contracting, amplifying its use and creating greater market equalization in regional healthcare, improving operations and therefore producing greater healthcare equity for all.

Appendices

Appendix A: How to Calculate QALYs

QALYs are used primarily to correct someone's life expectancy based on the levels of health-related quality of life they are predicted to experience throughout the course of their life, or part of it. The number of QALYs lived by an individual in one year is simply:

$$\text{QALYs lived in one year} = 1 * Q \quad \text{with } Q \leq 1;$$

where Q is the health-related quality of life weight attached to the relevant year of life. From this descends that someone's quality-adjusted life expectancy (QALE) at age a can be defined as:

$$\text{QALE} = \sum_{t=a}^{a+L} Q_t$$

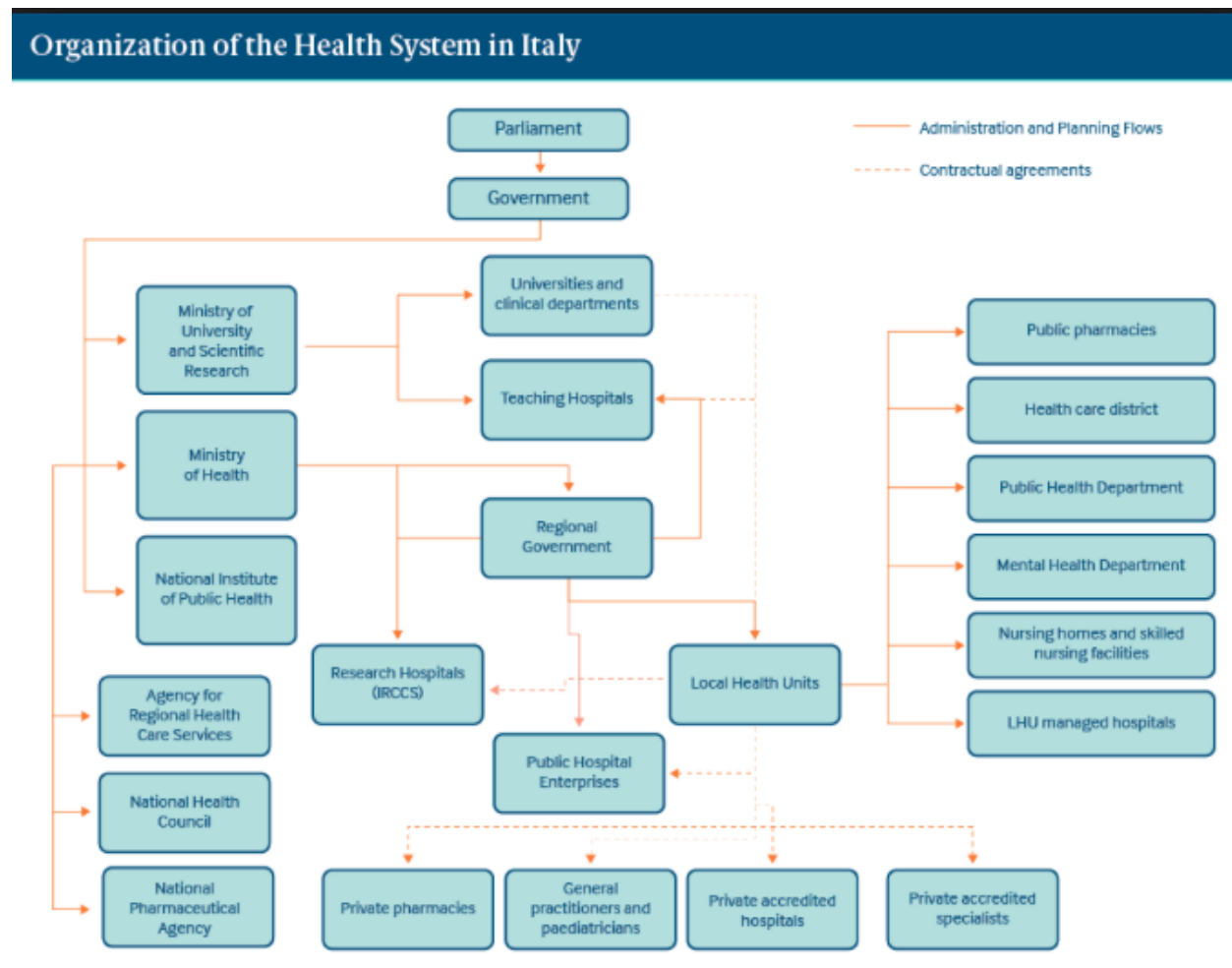
where L is the residual life expectancy of the individual at age a , and t represents individual years within that life expectancy range. If someone's quality of life is predicted to change over shorter than yearly periods, t can be taken to represent correspondingly shorter units of time, such as a month, a week or even a day. In these cases, L will have to be defined consistently. When time preference, and thus discounting, is incorporated into the equation, QALE becomes:

$$\text{Discounted QALE} = \sum_{t=a}^{a+L} \frac{Q_t}{(1+r)^{t-a}}$$

where r is the discount rate.

Source: Sassi, F. (2006). Calculating QALYs, comparing QALY and DALY calculations, Health Policy and Planning, 21(5): 402–408. <https://doi.org/10.1093/heapol/czl018>. Retrieved from <https://academic.oup.com/heapol/article/21/5/402/578296>.

Appendix B: Distribution of Healthcare Operational Structures in Italy



Source: A. Donatini, Emilia-Romagna Regional Health Authority, 2014.

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